THE EFFECTIVENESS OF COOPERATIVE LEARNING MODEL TYPE OF TEAMS GAMES TOURNAMENT WITH TYPE OF COURSE REVIEW HORAY TOWARD MATHEMATICS LEARNING OUTCOME OF THE STUDENTS OF SMP PUNDONG

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ABSTRACT

This research was conducted because students' mathematics learning outcomes were lack, the students had an opinion that mathematic was difficult and unpleasant, less active especially cooperation in learning, students perform other activities beyond teaching and learning strategies that teachers use less varied. This research is intended to find out the effectiveness of using cooperative learning model type Teams Games Tournament (TGT) with type Course Review Horay (CRH) Toward The Mathematics Learning Outcome of the VIII Grade Students of SMP Muhammadiyah 1 Pundong In The First Semester of Academic Year 2016/2017. The population in this research were all the students of grade VIII students of SMP Muhammadiyah 1 Pundong in academic year 2016/2017 consist of six classes, VIII A, VIII B, VIII C, and VIII D. Samples were taken three classes using purposive sampling techniques, it is obtained class VIII B as an experimental class I, class VIII D as an experimental class II and class VIII C as a control class. The data analysis technique that is used to test the prerequisites including normality test with Chi-Square formula, homogeneity test with Bartlet formula, and test hypotheses including F test and Least Significant Different (LSD). The result of the significant level of 5% and db = (2,56) showed (1) there is a difference in the results of students' learning mathematics that is taught by cooperative learning model type Teams Games Tournament, cooperative learning model type Course Review Horay and direct instruction learning model. It is evidenced by the value $F_{stat} = 5{,}21989$ and $F_{table} = 3{,}15533$, as a result $F_{stat} > F_{table}$, so, H_0 rejected, and (2) cooperative learning model type Teams Games Tournament and cooperative learning model type Course Review Horay are more effective than direct instruction learning model on students' mathematics learning outcomes. It is shown with the LSD test with a significant level of 5% and 56 degrees of freedom obtained in the first case because $|\bar{y}_1 - \bar{y}_2| = 3{,}71$ and LSD = 5,08465, as a result $|\bar{y}_1 - \bar{y}_2| <$ LSD so, H_0 is accepted and means that $\mu_1 = \mu_2$. In case II $|\bar{y}_1 - \bar{y}_3| = 15{,}3225$ and LSD = 6,83999, as a result $|\bar{y}_1 - \bar{y}_3| >$ LSD so H_0 is rejected. Because $\bar{y}_1 = 61{,}99$ and $\bar{y}_3 = 46{,}6675$, as a result $\bar{y}_1 > \bar{y}_3$ means $\mu_1 > \mu_3$. Meanwhile in case III $|\bar{y}_2 - \bar{y}_3| = 11{,}6125$ and LSD = 6,83999, as a result$|\bar{y}_2 - \bar{y}_3| >$ LSD so H_0 is rejected. Because $\bar{y}_2 = 58{,}28$ and $\bar{y}_3 = 46{,}6675$, as a result $\bar{y}_2 > \bar{y}_3$ means $\mu_2 > \mu_3$. It can be concluded that $\mu_1 = \mu_2 > \mu_3$.

Keywords: *Effectiveness, Cooperative Learning, Teams Games Tournament, Course Review Horay and direct instruction.*

INTRODUCTION

Education for tajdid (M. Amien Rais, 1985: 17), thus the importance of education as an integral part of national development. Likewise, the noble purpose of education in its fitrah is to form a whole human being, so that in its realization, it requires maximum utilization of each layer of the education system. All parties who determine the quality of education must understand that "Educating means continuing and developing life values" (Uzer Usman, 2011a: 7). Being a picture that the teaching process in the classroom must be able to build mindsets and the ability to solve problems in life. In accelerating the improvement of the quality of education is an increase in the quality of the learning process. In this case, a teacher as part of the education element on behalf of the educator is the person responsible for the implementation of education (Uzer Usman, 2011b: 54). Furthermore, an educator must hold tightly to the principle that interactions in the teaching-learning process have broad meaning, not just the relationship between the teacher and students, but in the form of educational interactions. So in improving the quality of the process and learning outcomes, it is important for a teacher to choose the

right learning method. A teacher should choose a learning method that can increase the activeness and attention of students in the learning process, especially in learning mathematics. So what needs to be a concern in delivering mathematics lessons is that the process of delivering the material must be packaged in an interesting and fun way.

Based on the author's observations on October 14, 2015, and July 22, 2016, with Mrs. Rini Istiqamah, S.Pd as the subject of mathematics in grade VII of SMP Muhammadiyah 1 Pundong, some information was obtained that students' mathematics learning outcomes were still low, the assumption of some students that mathematics was wrong one subject that is difficult and unpleasant, students are less active, especially cooperation in learning, and the teacher is not yet massive in making variations in the use of appropriate learning methods for students. So the authors intend to conduct research using cooperative learning methods Teams Games Tournament (TGT) and Course Review Horay (CRH) types in conducting mathematics learning in class. The author wants to know which is more effective to use between the Teams Games Tournament (TGT) type of learning model, Course Review Horay (CRH) type and the direct learning model of the mathematics learning outcomes of VIII grade students of SMP Muhammadiyah 1 Pundong Academic Year 2016/2017 on discussion relations and functions. Slavin found that TGT succeeded in increasing basic skills, achievement, positive interactions between students, self-esteem, and attitudes of acceptance to other students who were different (Huda, 2014a: 197). Furthermore "Components in TGT are a presentation of material, teams, games, tournaments, and group awards" (Shoimin, Aris, 2014a: 203). The TGT type of cooperative learning model is believed to be able to create a more comfortable learning climate for students, coupled with responsibilities, synergy between members, healthy competition, and learning involvement. Shoimin, Aris (2014b: 54) states "Course review type horay learning model is one of cooperative learning, namely teaching and learning activities by grouping students into small groups. Through learning is expected to train students to solve problems by forming small groups. Through this type of review course, the cooperative learning model is expected to create a cooperative learning atmosphere for mutual development between students with high capacity and students with less capacity.

Cooperative learning model type course review horay is characterized by the structure of the task, goals, and cooperative rewards that have an impact on the existence of a positive attitude of dependence among fellow students (cooperative). According to Huda, Miftahul (2014b: 229-230) the horay review course is "a learning model that can create a fun and lively classroom atmosphere because every student who can answer correctly is required to shout" horay !! "or other yells that are liked". In the direct learning model, it tends to be centered on the teacher where the teacher dominates learning in the classroom which results in students being less active and involved in the learning process. But according to Tindaon, Y. A (2012) these conditions can still work well if all students have good listening and listening skills. Student mathematics learning outcomes are determined on the ability of students to absorb the information provided by the teacher and student independence in interpreting the exercises and assignments given by the teacher.

Based on the background and identification of the problems that have been described, the problem formulation of this research is:

1. Are there differences in mathematics learning outcomes between students who use the Teams Games Tournament (TGT) type of cooperative learning model and the Course Review Horay type, and the direct learning model in class VIII of SMP Muhammadiyah 1 Pundong?
2. Which is more effective between the Teams Games Tournament type of learning model, Course Review Horay type, and the direct learning model of the mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah 1 Pundong in the 2016/2017 school year?

Based on the problem formulation above, this study aims to find out the following matters:

1. To determine the presence or absence of differences between the mathematics learning outcomes of students who use the cooperative learning model Teams Games Tournament type and Course Review Horay type, and direct learning models in class VIII SMP Muhammadiyah 1 Pundong.

2. To find out more effectively, between the learning model of the Teams Games Tournament type, the Course Review Horay type, and the direct learning model of the mathematics learning outcomes of Grade VIII students of SMP Muhammadiyah 1 Pundong in the 2016/2017 school year.

METHODS

The form of research design used in this study is True Experimental Design with the type of Posttest-Only Control Design. In this design, the subject is placed randomly into groups and exposed as an independent variable to then be given a post-test. Subsequent post-test values were compared in order to determine the effectiveness of the treatment or learning model used. And in this study using three classes, namely the experimental class I using the TGT learning model, experimental class II using the CRH type learning model, and the control class using the direct learning model.

Table 1. Research Design

	Initial Ability	**Treatment**	**Post-test**
R	O_1	X_1	Y_1
R	O_2	X_2	Y_2
R	O_3	X_3	Y_3

Information :

R: Classes that use the TGT type learning model
R: Classes that use CRH type learning models
R: Classes that use the direct learning model
O_i: initial ability value
X_1: Treatment with TGT type learning models
X_2: Treatment with CRH type learning models
X_3: Treatment with direct learning models
Y_i: Post-test score

The study was conducted on August 2 - August 16, 2016, at Muhammadiyah 1 Pundong Middle School in the odd semester of the 2016/2017 school year with the subject of relations and functions. The population of this study were all eighth-grade students of Muhammadiyah 1 Pundong Middle School in the 2015/2016 academic year, totaling 78 students. In this study sampling using a purposive sampling technique to the class, namely the sampling class is carried out with certain considerations namely the average value of UKK which is almost the same. In order to get class VIII B with 19 students as experimental class I, class VIII D with 20 students as experimental class II, and class VIII C with 20 students as control class. Data collection techniques using the test method. Data collection instruments in the form of multiple-choice questions. The test instrument was tested on a test class that is class VIII A. After the test questions were tested, the items were analyzed with the validity test using the product-moment correlation formula, the reliability test used Kuder Richardson (KR-20), the level of difficulty test, and different power using the formula discrimination index. The data analysis technique used is the prerequisite test includes a test for normality and homogeneity test and hypothesis testing with variance analysis and LSD advanced test.

RESULTS AND DISCUSSION

Based on the research that has been done, it is obtained and an analysis of the students' initial ability data. in this case, is the grade increase test (UKK) and the student's mathematics learning achievement test data after treatment is given.

1. Initial Capability Data

Based on the UKK scores obtained a description of the students' initial ability scores as shown in Table 2 below.

Table 2. Summary of Initial Ability Values

Information	**Class Experiment**		
	TGT	*CRH*	Direct
Highest	62,5	60,0	70,0
Lowest	15,0	27,5	20,0
< KKM	19	20	19
≥ KKM	0	0	1
Total students	19	20	20
Average	31,71	38,9	37,3
Value percentage ≥ KKM	0%	0%	5%

The Normality test is used to ensure that the initial mathematics learning outcomes of each experimental class are normally distributed. A summary of the results of a normal student's mathematics learning test can be seen in Table 3.

Table 3. Summary of Normality Test

Parameter	**Class Experiment**		
	TGT	CRH	Direct
x^2_{stat}	1,57326	1,7416	2,10863
x^2_{table}	5,991	5,991	3,841
A	5%	5%	5%
dk (k-1)	2	2	1
Testing Criteria	Samples are normally distributed if $x^2_{stat} < x^2_{table}$		
Information	Normal	Normal	Normal

A summary of the results of the homogeneity test calculation can be seen in Table 4.

Table 4. Test Summary Homogeneity

Parameter	**Value**
x^2_{stat}	3,95492
x^2_{table}	5,991
Significant Level	5%
$dk(k-1)$	2
Testing Criteria	Homogeneous sample $x^2_{stat} < x^2_{table}$
Information	Homogeneous

A summary of the results of the hypothesis testing of the initial ability scores of the experimental class I students, the experimental class II, and the control class can be seen in Table 5.

Table 5. Summary of Anavas

Source of Variance	Dk	JK	RJK (KT)	
Average	1	76572,04	76572,04	,350 76
Between treatments	2	549,00397	274,502	
Error	56	6539,21	116,77	
Total	59	83660,25	-	

The table above shows the value F_{stat}=2,35076 while the value F_{table}=3,15533, it's mean $F_{stat} < F_{table}$, then H_0 accepted means that there is no difference in the initial abilities of students who take part in learning using the TGT, CRH, and direct learning models.

2. Research Results Data

Berdasarkan hasil *posttest* deskripsi data hasil belajar matematika siswa baik kelas eksperimen dan kontrol dapat dilihat pada Tabel 6 berikut.

Tabel 6. Rangkuman Deskripsi Data Hasil Belajar Matematika

Information	**Class eksperiment**		
	TGT	CRH	Direct
Total students	19	20	20
The highest score	88,89	83,33	77,78
Lowest Value	27,78	27,78	22,22
Average	61,99	58,28	46,6675
Standard Deviation	16,3835	14,172	15,960
Variance	268,419	200,847	254,7334

A summary of the results of the normality of student mathematics learning outcomes can be seen in Table 7.

Table 7. Summary of Test Normality in Learning Outcomes Test Scores

Parameter	**Class experiment**		
	TGT	CRH	Direct
x^2_{stat}	1.7699	0,1018	1,09509
x^2_{table}	5,991	3,841	5,991
Significant level	5%	5%	5%
dk (k – 1)	2	1	2
Testing Criteria	Samples are normally distributed if $x^2_{stat} < x^2_{table}$		
Information	Normal	Normal	Normal

To find out whether all three classes have the same variance, we can look at the summary of homogeneity test scores for the learning outcomes in Table 8 below.

Table 8. Summary of Tests for Homogeneity in Learning Outcomes Test Values

Parameter	**Value**
x^2_{stat}	0,435294
x^2_{table}	5,991
$\boldsymbol{\alpha}$	5%
dk (k – 1)	2
Testing Criteria	Homogeneous sample $x^2_{stat} < x^2_{table}$
Information	Homogeneous

The null hypothesis (H_0) and its alternative (H_1) proposed for hypothesis testing are as follows:

$$H_0: \tau_i = 0 (i = 1,2,3)$$

There is no difference in mathematics learning outcomes between students who use the Teams Games Tournament learning model, the Course Review Horay type, and the direct learning model

H_1

$$: \tau_i \neq 0$$

There are differences in mathematics learning outcomes between students who use the Teams Games Tournament learning model, the Course Review Horay type, and the direct learning model.

At the 5% significance level, the results of the hypothesis test of the final mathematics learning outcomes can be seen in Table 9

Table 9. Results of Post-test Hypothesis Test Calculations

Source of Variance	Dk	JK	RJK (KT)	F
Average	1	181978	181978	5,2199
Between treatments	2	2514,42	1257,209	
Mistake	56	13487,58	240,85	
Amount	59	197979,22	-	

From the table above it can be seen $F_{stat} = 5{,}2199$ and $F_{table} = 3{,}15533$ at a significance level of 5%. Because $F_{stat} > F_{table}$ then H_0 rejected.

Conclusion:

There are differences in mathematics learning outcomes between students who use the TGT type learning model, CRH, and the direct learning model. The results of the hypothesis state that there are differences in the influence of the use of the TGT, CRH type cooperative learning model and the direct learning model on the mathematics learning outcomes of Grade VIII odd semester students of SMP Muhammadiyah 1 Pundong in the 2016/2017 school year, so further testing is needed to find out which learning model is the most effective to use. After the anava test used is the LSD (Least Significance Different) test. LSD test results can be seen in Table 10

Table 10. LSD Test Results

Comparison	**Mean difference**	**LSD**	**Info.**
$\lvert\bar{y}_1 - \bar{y}_2\rvert$	3,71	5,08465	There is no significant difference
$\lvert\bar{y}_1 - \bar{y}_3\rvert$	15,3225	5,08465	Significant differences
$\lvert\bar{y}_2 - \bar{y}_3\rvert$	11,6125	6,83999	Significant differences

CONCLUSION

Based on data analysis and some of the factors above, the following conclusions can be drawn:

1. There are differences in mathematics learning outcomes between students who use the Teams Games Tournament type of learning model, Course Review Horay type, and the direct learning model in class VIII odd semester students of SMP Muhammadiyah 1 Pundong in the 2016/2017 school year.
2. The Teams Games Tournament type of cooperative learning model is as good as the Course Review Horay type of cooperative learning model, while the Teams Games Tournament type of cooperative learning model and Course Review Horay type is more effective than the direct learning model of the mathematics learning outcomes of students of SMP Muhammadiyah 1 Pundong year 2016/2017 teaching.

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